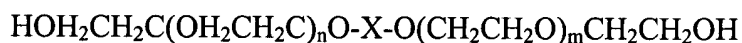


THE CLAIMS

What is claimed is:

1. An insert for a golf club, wherein the insert is formed of a polyurethane composition comprising a prepolymer comprised of a polyol and a polyisocyanate, and a curing agent; and wherein the polyisocyanate is selected from the group consisting of 4,4'-diphenylmethane diisocyanate, polymeric 4,4'-diphenylmethane diisocyanate, toluene diisocyanate, 3,3'-dimethyl-4,4'-biphenylene diisocyanate, *p*-phenylene diisocyanate, 4,4'-dicyclohexylmethane diisocyanate, and isophorone diisocyanate.

2. The insert of claim 1, wherein the curing agent is a diol having a formula:



wherein *n* and *m*, each separately have a value of 0, 1, 2, or 3, and wherein X is *o*-phenylene, *m*-phenylene, *p*-phenylene, *o*-cyclohexyl, *m*-cyclohexyl, or *p*-cyclohexyl.

3. The insert of claim 2, wherein *n* and *m* each separately have a value of 1 or 2.

4. The insert of claim 1, wherein the curing agent is a diol selected from the group consisting of 1,3-bis(2-hydroxyethoxy) benzene, 1,3-[bis-(2-hydroxyethoxy)]-diethoxy benzene, 1,4-butanediol, resorcinol-di-(β-hydroxyethyl) ether, hydroquinone-di-(β-hydroxyethyl) ether, ethylene glycol, diethylene glycol, polyethylene glycol, and mixtures thereof.

5. The insert of claim 1, wherein the golf club is a putter.

6. The insert of claim 1, wherein the polyisocyanate is *p*-phenylene diisocyanate.

7. The insert of claim 1, wherein the polyol is selected from the group consisting of polytetramethylene ether glycol, poly(oxypropylene) glycol, polybutadiene glycol, polyethylene

adipate glycol, polyethylene propylene adipate glycol, and polybutylene adipate glycol, *o*-phthalate-1,6-hexanediol polyester polyol, diethylene glycol initiated caprolactone, trimethylol propane initiated caprolactone, neopentyl glycol initiated caprolactone, 1,4-butanediol-initiated caprolactone, 1,6-hexanediol-initiated caprolactone, and mixtures thereof.

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8. The insert of claim 1, wherein the polyol is selected from the group consisting of polytetramethylene ether glycol, polyethylene adipate glycol, polybutylene adipate glycol, diethylene glycol initiated caprolactone, and mixtures thereof.

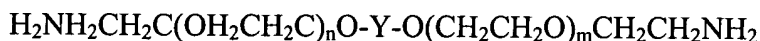
10 9. The insert of claim 1, wherein the polyol is present in an amount of about 70 to 98 percent by weight of the prepolymer, the polyisocyanate is present in an amount of about 2 to 30 percent by weight of the prepolymer, and the diol curing agent is present in an amount of about 10 to 110 weight percent of the prepolymer.

10. The insert of claim 9, wherein the polyisocyanate is present in an amount of about 6 to 12 percent by weight of the prepolymer.

11. The insert of claim 1, wherein the polyurethane composition further comprises at least one polyamine curing agent.

12. The insert of claim 11, wherein the curing agent is a polyamine selected from the group consisting of isophrone diamine, dicyclohexylmethane diamine, isomers of 3,5-diethyltoluene-2,4 (2,6)-diamines, isomers of 3,5-dimethylthio-2,4 (2,6)-toluenediamines, 4,4'-bis-(sec-butylamino)-diphenylmethane, 1,4-bis-(sec-butylamino)-benzene, 4,4'-methylene-bis-(2-chloroaniline), 4,4'-methylene-bis-(3-chloro-2,6-diethylaniline), trimethylene glycol-di-*p*-aminobenzoate, polytetramethyleneoxide-di-*p*-aminobenzoate, and mixtures thereof.

13. The insert of claim 12, wherein the polyamine curing agent has a formula:



wherein n and m, each separately have a value of 0, 1, 2, or 3, and wherein X is *o*-phenylene, *m*-phenylene, *p*-phenylene, *o*-cyclohexyl, *m*-cyclohexyl, or *p*-cyclohexyl.

14. The insert of claim 1, wherein the polyurethane composition comprises a reaction product of *p*-phenylene diisocyanate, polytetramethylene ether glycol, and 3,5-dimethylthio-2,4 (2,6)-toluenediamine.
15. The insert of claim 1, wherein the polyurethane composition further comprises a density-modifying filler.